

## **Battlefield Helicopter Emulator (BHE) BAA**

### **Questions and Answers**

#### **1. Helicopter acoustic signatures**

a. Will any signature data be made available to proposers?

*No.*

If not, is it expected or required that proposers already have data for military rotorcraft?

*No.*

b. Can any guidance be provided regarding upper frequency range of interest?

*Proposers should make assumptions about acoustic signatures based upon their best engineering judgment and/or open source data.*

c. If a proposer receives a Phase 1 award, will signature data be provided as GFI if requested in the proposal?

*Yes.*

d. If the actual rotorcraft noise is aspect dependent, how should the spectral shapes be chosen for the emulator design, which appears to call for a relatively uniform horizontal directivity?

*It is not anticipated that electro-acoustic detectors will rely upon azimuthal variation of source acoustic signature. As such, the BHE Phase 1 design is not required to match the azimuthal variation of actual source signature.*

e. What is the proper interpretation of these statements in the PIP: "Produce proper helicopter acoustic and infrared signatures to induce a launch from an AHM or MANPADS at an emulated range of 250 meters at a 1 km actual range."

Does this mean we are to make the AHM or MANPADS think helicopter is at 250 meters from sensor when it is actually 1 km away?

*Yes.*

f. Is AHM, MANPAD location predetermined?

*No. See response to 1.e.*

g. Is large acoustic footprint desired?

*Acoustic footprint should be of sufficient size to meet the program goals stated in the PIP.*

**2. Acoustic tuning: is it desired that the tuning capability be in-flight, or can it be pre-flight (but on-site)?**

*In-flight desired, on-site required.*

**3. UAV Platform**

a. What are the specifications (size, weight, type) on the government provided UAV platform? What weight, volume, etc are available?

*Phase I is focused on development and demonstration of technologies small enough to fit onto a tactical UAV platform. UAV details will be provided in Phase II.*

b. Is power available on the UAV or does a power source need to be provided by proposing team?

*See response to 3.a.*

c. Do you have any candidate UAV's identified for the project?

*See response to 3.a.*

**4. Proposal Requirements:**

a. If we intend to propose only an acoustic technology, can/should we propose for only Phase 1, or is a proposal for all Phases required?

*Proposals for only acoustic technology will be deemed non-responsive.*

b. Will proposals covering both the acoustic and IR problems be viewed more favorably than proposals for the full solution?

*The requirement is for acoustic and IR emulation.*

c. Page 5 of the PIP indicates that this solicitation is for Phase I only, with Phase II and Phase III options. Since detailed information on the surrogate UAV platform, associated equipment, and technical support for BHE system integration and testing will not be furnished until the beginning of Phase II, is firm pricing requested for Phases II and III or will ROM pricing suffice based on our technical approach along with assumptions for the unknown elements?

*Pricing for Phases II and III should be as firm as reasonably possible in order for the Government to evaluate cost reasonableness and realism. In developing your pricing, explicitly state the assumptions that were made to arrive at the proposed price. Your cost response should include labor hours, direct and indirect rates, subcontracts, other direct costs and/or materials for each Phase based upon your stated assumptions. Despite the request for firm pricing, it is understood that the proposed Phases II and III amounts may need to be modified by mutual agreement as a result of changed circumstances during the subsequent phases.*

d. Section 5.0 of the PIP indicates that Management Approach is the second most important evaluation criterion, yet the Detailed Proposal Information does not identify a management section as part of the proposal. Where is the Management Approach information expected to appear?

*Volume I of the proposal titled "Technical and Management Proposal."*

e. Proposal formatting characteristics, section 4.2 in PIP, states that technical proposal shall contain no smaller than 12 point font type. Does this apply to artwork contained therein, such as labels on pictures, etc?

*No. Smaller point font sizes are acceptable for artwork contained within the proposal, but no smaller than 8 point.*

f. What connotes timely proposal submission? Upload of non-classified proposal at the TFIM-S web site? Receipt of two (2) paper copies of the full proposal with authorized transmittal letter?

*Full proposals must be submitted to DARPA/TTO no later than 12:00pm (noon) EST on March 29, 2007.*

## **5. Previous Effort**

a. We've heard that there was a Phase 0 performer for BHE. Can you say who, or what organization, was the performer?

*The Phase 0 Performer was Science Applications International Corporation (SAIC). Technical POC is Dr. Shmuel Eidelman, [SHMUEL.EIDELMAN@saic.com](mailto:SHMUEL.EIDELMAN@saic.com)*

b. Was the MACAW program ever awarded and if so, is there any relevant information available from this study?

*See response to 5a.*

c. Since the Phase 0 effort determined that a solution to your requirement was “possible” (with the term “possible” defined – in our understanding – as “having some likelihood of successful accomplishment”), could interested bidders have access to the results of the Phase 0 study/assessment in order to provide such potentially interested bidders with a “level playing field” in responding to this solicitation?

*The solution arrived at by the Phase 0 effort was merely an "existence proof" of a solution to the acoustic and IR emulation problem. Other solutions may exist, which is why DARPA decided to have a BAA rather than a sole source award. The Phase 0 performer contact information is provided in the FAQ.*

**6. Other**

a. Is the RDT&E budget line for BHE still valid?

*No Comment. DARPA intends to make any number of awards, so the total budget is not a guide for individual responses.*

b. Is it possible to present a briefing to DARPA on our approach prior to submission of proposal?

*Yes.*

**7. Is it intended that the BHE system, integrated onto the surrogate UAV platform, will fly in Phase II, or is the first in-flight demonstration envisioned for Phase III?**

*Successful demonstration of integrated system implies flight during Phase II.*

**8. Will the Government test range be provided at no-cost to the contractor?**

*The government test range will be provided as GFE.*

**9. Will DARPA consider extending the due date for BAA 07-05?**

**The response to question 4.c. of the FAQ for this BAA was recently changed from indicating that ROMs were OK for phases II and III, to indicating that now firm prices are desired. Preparing firm prices for phases II and III will be challenging given the significant assumptions that will need to be made, but also challenging due to the greater scope of these later phases. Lastly, it is likely that all compliant responders will have significant contributions from subcontractors, and the coordination, preparation, and integration of firm subcontractor proposals for phases II and III will require additional time.**

**Given the change from ROMs to firm prices for phases II and III, a two-week extension to the due date is requested (from 3/15/07 to 3/29/07).**

*Yes, proposals are now due no later than 12:00pm (noon) on 29 March 2007. A BAA modification to that effect is forthcoming.*

**10. Is there any indication that the BHE ConOps will require persistence over “target sweep” areas?**

*Detailed CONOPs will be developed in Phase 2 and 3. The focus of Phase 1 is to develop the technical capability to simulate helicopter acoustic and IR signatures.*

**11. Does the requirement for rapid “on/off” capability infer that the integrated BHE system will be able to detect when it is under attack?**

*See answer to 10.*

**12. Would you expect the BHE system to emulate multiple helicopter signatures simultaneously?**

*The goal of the program is to develop an aerial decoy capable of emulating the acoustic and infrared signatures of a wide variety of battlefield helicopters.*

**13. Which Government facilities do you envision using during Lab Testing, Field Testing, and Flight Testing?**

*GFE will be provided following an award for Phase I.*

**14. Is AHM, MANPAD ranging via radar a concern?**

*The current program effort is focused on acoustic and IR emulation technologies. Radar ranging from AHM and MANPADS may be considered in the future.*

**15. Is depot maintenance/re-use of BHE decoy a consideration?**

*Operations and maintenance (O&M) philosophies will be developed as part of the Concept of Operations (CONOPS) in Phase II.*

**16. Does observed BHE decoy visible profile have emulation requirements?**

*No, the requirements for this BAA are for acoustic and IR emulation.*

**17. The PIP states; "The acoustic and infrared emulation systems are two separate and distinct systems and, therefore, will be evaluated independently of each other."**

Is this a design requirement or a requirement for testing? Is an integrated solution of interest to DARPA?

*Design requirement. The acoustic and IR emulation criteria will be evaluated independently of each other during Phase I ground tests. An integrated system will be evaluated at the end of Phase II.*